USSR

UDC: 533.6.013.42

DZHUPANOV, V. A.

"Oscillations of Cylindrical Shells in a Fluid"

Sb. tr. Mosk. inzh.-stroit. in-t (Works of the Moscow Engineering Construction Institute--collection) No. 61, 1970, No. 2, pp 80-95 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8V349)

Translation: The mutual effect of the oscillations of two cylindrical shells in an ideal incompressible fluid is considered; it is assumed that the form of the oscillations is specified and the boundary conditions for the velocity potential are written from the impermeability conditions of the floor of the vessel and of the shell surface, the smallness of the surface waves, and the absence of wave sources at infinity. The velocity potential for oscillations of a single shell is first written, and then, through superposition, the potential for two shells is obtained; the hydrodynamic pressure on the surface of the shells and the coefficients of the added masses of fluid in the oscillation of two rods are determined. Bibliography of 13. P. I. Zheludev

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USSR

UDC: 517.944

DZHURAYEV, A., Corresponding Member of the Academy of Sciences of the Tadzhik SSR, Department of Mathematics With Computing Center, AS TadzhSSR

"Concerning a Case of Degeneration of a First-Order Elliptical System on a Plane"

Dushanbe, Doklady Akademii Nauk TadzhSSR, Vol 15, No 11, 1972, pp 3-5

Abstract: The author considers a first-order system of partial differential elliptic equations in a region bounded on the left by a segment AB of the y - axis and on the right by an arc terminating at A and B and lying in the half-plane where x is positive. The system is elliptical for non-zero x and degnerates on the line AB, which is a characteristic curve of the system. Theorems are derived on the index, the number of solutions of the homogeneous problem, and conditions of solvability in terms of the conjugate problem.

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USSR

UDC 517.948

DZHURAYEV, A.

"Singular Integral Equations of the First and Second Type with Respect to a Bounded Two-Dimensional Region"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 4, 1972, pp 742-745

Abstract: A method of investigating two-dimensional singular integral equations of the following type was proposed earlier [A. Dzhurayev, DAN, Vol 197, No 6, 1251, 1971; Vol 198, No 1, 1971]:

$$K(\omega) \equiv a(z)\omega(z) + b(z)\overline{\omega(z)} + c(z)S(\omega) + d(z)\overline{S(\omega)} + a_0(z)T(\omega) + b_0(z)T(\omega) = g(z) \qquad (1)$$

for the case $b(z) = c(z) = a_0(z) = b_0(z) \equiv 0$, $|a(z)|^2 - |d(z)|^2 \neq 0$, $z \in \overline{G}$, $\overline{G} = G + \gamma$ and for the case $b(z) = d(z) = 0$, $|a(z)|^2 - |c(z)|^2 \neq 0$, $z \in \overline{G}$; where G is a bounded region in a complex plane z the boundary of which γ comprises a finite number of closed nonintersecting Lyapunov curves, $S(\omega) = 1/\pi \iint_G \frac{\omega(\zeta)\,dG_\zeta}{(\zeta - z)^2}$ is a single integral operator, and $T(\omega) = -1/\pi \iint_G \frac{\omega(\zeta)\,dG_\zeta}{\zeta - z}$.

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DZHURAYEV, A., Doklady Akademii Nauk SSSR, Vol 203, No 4, 1972, pp 742-745

A study has now been made of the general equation (1) under the conditions

$$\delta(z) \equiv |a(z) - c(z)|^2 - |b(z) - d(z)|^2 \neq 0, \quad z \in \overline{G},$$

$$\Delta(z) \equiv (|a(z)|^2 - |b(z)|^2 - |c(z)|^2 + |d(z)|^2)^2 -$$

$$- 4|a(z)d(z) - b(z)c(z)|^2 > 0, \quad z \in \overline{G}.$$

Four theorems are proved regarding the properties of singular integral equations of the first and second types with respect to a bounded two-dimensional region.

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USSR

UDC 517.43

DZHURAYEV, A.

"A Method of Studying Singular Integral Equations with Respect to a Bounded Two-Dimensional Domain"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 6, 1971, pp 1251-1254

Abstract: A method of studying singular integral equations with respect to a bounded two-dimensional domain is proposed. Let G be a bounded domain in the complex plane z the boundary of which γ comprises a finite number of nonintersecting closed curves of class $C_\alpha^1 (0 < \alpha < 1)$. The author considers the singular integral

$$K(\omega) \equiv a(z)\omega(z) + \frac{b(z)}{\pi}\iint_G \frac{\overline{\omega(\zeta)}\,dG_\zeta}{(\zeta - z)^2} = g(z), \qquad (1)$$

equation in G where a(z), b(z), g(z) are given complex-valued functions of the class $C^1(G) \cap C_\alpha(\bar{G})$; $\bar{G} = G + \gamma$. Along with (1) the following equation is also investigated:

$$K^*(\omega^*) \equiv a(z)\omega^*(z) + \frac{1}{\pi}\iint_G \frac{\overline{b(\zeta)}\,\overline{\omega^*(\zeta)}\,dG_\zeta}{(\zeta - z)^2} = h(z), \qquad (2)$$

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DZHURAYEV, A., Doklady Akademii Nauk SSSR, Vol 197, No 6, 1971, pp 1251-1254

which is called conjugate to equation (1). The theory of equations (1), (2) is constructed in the case for which the condition $|a(z)|-|b(z)|>0$, $z \in G$ is violated.

The proposed method of investigating equations (1), (2) in the case $|a(z)| - |b(z)| \neq 0$ in $\bar{G}$ is based on the theory of boundary value problems of the type of conjugate generalized analytical functions. The established relation between the singular integral equations (1), (2) and the corresponding boundary value problems stated in this paper offers the possibility of obtaining exact numbers of solutions of the homogeneous equations (1) and (2) also in the case for which $|a(t)| - |b(t)| < 0$ when $t \in \gamma$.

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USSR

UDC 539.181.1

GOL'DANSKIY, V. I., Corresponding Member of the USSR Academy of Sciences, DZHURAYEV, A. A., YEVSEYEV, V. S., OBUKHOV, Yu. V., ROGANOV, V. S., FRONTAS'YEVA, M. V., KHOLODOV, N. I., Institute of Chemical Physics, USSR Academy of Sciences

"Atomic Capture of Negative Mesons in Compounds Containing Hydrogen"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 2, 11 Jul 73, pp 316-318

Abstract: An attempt is made to find possible underlying regularities in the distribution of negative muons between the individual groups Z_mH_n and atoms Z' in substituted hydrogen-containing organic compounds and in hydrogen-containing compounds in general of the type $Z_mH_nZ'_k$ or $Z_mH_\nu Z'_kH_\nu$. A table is given summarizing the relative probabilities of capture of μ^--mesons by hydrocarbon and hydrogen-containing groups and by aromatic rings in compounds with ionic bonds, in alkyl chlorides, and in phenyl halides.

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DZHURAYEV, A. A.

AEC/kA /TB-72-7

LA-TR-72-7

JINR-P1-6020

Joint Institute for Nuclear Studies

Dubna

A. A. Dzhurayev, V. S. Evseev, G. G. Myasishcheva, Iu. V. Obukhov, and V. S. Rogonov

DEPOLARIZATION OF NEGATIVE MUONS IN SOLID SUBSTANCES

Laboratory for Nuclear Problems

1971

Translated by Helen C. Dahlby

Los Alamos Scientific Laboratory
Los Alamos, New Mexico
January 1972

USSR

UDC 517.948.32/33

DZHURAYEV, A. D., Corresponding Member of Tadzhik SSR Academy of Sciences, Department of Mathematics With the Computer Center of the Tadzhik SSR Academy of Sciences

"Solution of One Class of Characteristic Singular Integral Equations on a Complex Plane"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 4, 1971, pp 3-6

Abstract: The author first examines a singular integral equation (1) and then in addition to (1) he writes another equation (2) involving the operators S and S*. He notes that the singular operators S and S* are adjoint in the metric sense. In satisfying the condition $n^2|a|^2-|b|^2 \neq 0$, the author seeks the solution of equations (1) and (2) from the class $L_p(E)$, $p > 1$, which for sufficiently large values of $|z|$ satisfies the condition $|z|^{\lambda+\varepsilon}|\omega(z)| \leqslant$ const. The author expresses the theorem that uniform equations corresponding to equations (1) and (2) have no incorrect solutions, but the nonuniform equations (1) and (2) have unique solutions and for their solution he gives formulas (4) and (5) which he proceeds to prove. He concludes the article with the notation that when $n = 1$, the Hilbert equation, which the author gives, is a one-dimensional analog to equations (1) and (2) for the real unknown function. The article contains a bibliography of 4 titles.
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MATHEMATICS

Differential and Integral Equations

USSR

UDC 517.943.32/33

DZHURAYEV, A. D., Corresponding Member of the Tadzhik SSR Academy of Sciences, Engineering Physics Institute imeni S. U. Umarov of the Tadzhik SSR Academy of Sciences

"A Class of Singular Integral Equations for a Restricted Region on a Plane"

Tashkent, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 13, No 8, 1970, pp 3-8

Abstract: Two singular integral equations are examined for a restricted region G of a complex curve E, whose boundary Γ consists of a finite number of nonintersecting, smooth, closed curves. The equations give operators $K_\lambda(\omega)$ and $K^*_\lambda(\omega^*)$ in terms of the arguments a(z), b(z), and λ, a complexly-valued number satisfying the condition $|\lambda| < 1$. When $\lambda = 0$, singular integral equations result. Two theorems on the number of finite solutions of these equations are proven by means of two lemmas.

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USSR

CHICHENIN, P. I., ADILOV, D. A., YUSUPOV, K. Yu., SHARIPOV, M. K., PULATOV, Ya. G., LI GVAN KHVA, V. T., AGZHANOV, N. A., and DZHURAYEV, Kh. D., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Epidemiological Characteristics of Anthrax in Uzbekistan During Recent Years"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

Abstract: In 1949-60 the incidence of anthrax affecting human beings decreased by a factor of three in the Uzbek SSR from that in 1925-48, mainly as a result of immunization of occupationally exposed persons. In recent years the over-all incidence of anthrax among both humans and animals in the Uzbek SSR was reduced by effective prophylactic measures. However, there is no room for complacency, in view of the fact that there was in 1949-60 and especially in 1961-70 an increase in the relative weight of group infections connected with the uncontrolled utilization of meat and of other animal products after obligatory slaughter of diseased farm animals, particularly in the private sector. During the period under consideration, the frequency of anthrax in the Uzbek SSR exceeded that in the USSR by a factor of 3-4, with the number of cases in the Uzbek SSR comprising 10-16% of that in the entire USSR. On the basis of data covering the

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CHICHENIN, P. I., Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

incidence of anthrax in the past 20 yrs, one can differentiate between three zones in the Uzbek SSR: I) A zone of stable incidence among humans and animals (Tashkentskaya, Surkhandar'inskaya, and Samarkandskaya Oblasts); II) A zone with periodic outbreaks (Andizhanskaya, Khorzemskaya, and Kashkadar'inskaya Oblasts and the KKASSR); III) The zone with the most satisfactory conditions (Bukharskaya, Syrdar'inskaya, Namanganskaya, and Fergenskaya Oblasts). The ratio of cases of human anthrax to those in the entire Uzbek SSR was 62.33, 35.25, and 2.42% in zone I, II, and III, respectively, and that of anthrax of animals 67.13, 32.02, and 0.85% in zone I, II, and III, respectively. In view of the fact that the infection remains in the soil, prophylactic measures in locations at which anthrax has occured must be carried out constantly regardless of the time that has elapsed since the last outbreak and these measures reinforced at times at which digging into the ground takes place, e.g., in connection with agricultural irrigation.

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USSR

D

UDC: 616.981.42-036.22(575

DZHALILOV, K.D., DZHURAYEV, N.D., MUSABAYEV, I.K., YUSUPOV, K.YU., and PULATOV, YA.G., Uzbek Institute of Epidemiology, Microbiology, and Infectious Diseases, and Uzbek Republic Sanitary Epidemiological Station and Infectious Diseases,

"Aspects of the Epidemiology of Brucellosis in Uzbekistan"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, pp 116-120

Abstract: Although the incidence of brucellosis has declined sharply in recent years in the Soviet Union as a whole, it remains high in the Central Asian republics, particularly Uzbekistan, mainly because cattle and sheep raising is widespread in both the public and private sectors. From 1962-1966 cattle were the source of the disease in man in 60.6% of the cases, sheep and goats in 32.5%, and other animals in 6.9%. The main routes of infection were alimentary (30.9%), contact (16.2%), and combined alimentary-contact (9.9%). The peak of the disease occurred during the spring and summer, when contacts of people with animals (lambing, shearing of wool) were most frequent, and consumption of dairy and milk products highest. Farms affected with the disease in 1966 were in Kashkadar'ya oblast (15.8%), Samarkand (14.2%), Tashkent oblast (12.3%), Karakalpak ASSR (12%), Surkhandar'ya (11.4%), Andizhan (10.7%) and Fergan (8.7%) oblasts. Among humans, more cases of chronic brucellosis than acute forms of the disease are reported every year.

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Acc. Nr: AP0043938 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 116-120

SOME PROBLEMS OF EPIDEMIOLOGY OF BRUCELLOSIS IN UZBEKISTAN

Dzhalilov, K. D.; Dzhurayev, N. D.; Musabayev, I. K.; Yusupov, K. Yu.; Pulatov, Ya. G.

As a result of analysis of the incidence of brucellosis and of individual problems of epidemiology and epizootology concerning brucellosis in Uzbekistan in 1956—1966, it was established that the index of brucellosis affection of farm animals was unequally distributed in the republic: in 1962—1966 88.7% of the affected animals were found in Samarkand, Bukhara, Kashkadarya, and Tashkent regions, and also Karakalpak ASSR and Tashkent city, only 11.3% being revealed in Surkhandarya, Khoresm, Fergana and Syrdarya regions.

A spring-summer seasonal prevalence was noted (80%). It was shown that brucellosis infection of human beings occurs mainly by alimentary route, cattle serving as the source of infection.

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USSR

UDC 517.9

DZHURAYEV, T. D., Institute of Mathematics, Academy of Sciences Uzbek SSR

"On Boundary Value Problems for Linear Parabolic Equations Degenerate on the Boundry of a Region"

Moscow, Matematicheskiye Zametki, Vol 12, No 5, Nov 72, pp 643-652

Abstract: The article considers questions of the uniqueness and existence of a limited solution of the boundary value problem for the equation

$$L(u) \equiv u_{xx} - a(t, x)\, u_t - b(t, x)\, u_x = f(t, x)$$

in the strip $Q\{0 < t \leqslant T,\ 0 < x < \infty\}$. It is assumed that the coefficients and right-hand side of the equation satisfy the following conditions A: they are continuous in Hölder's sense in any compactum lying in the strip Q; $a(t, x) > 0$ for $t > 0$, $x > 0$; $a(t, 0) = 0$, $a(0, x) = 0$; the

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DZHURAYEV, T. D., Matematicheskiye Zametki, Vol 12, No 5, Nov 72, pp 643-652

coefficient b(t, x) is bounded, given bounded x. Equations of form (1) occur in temperature boundary layer theory. The question of formulating correct boundary value problems in strip Q for equation (1) is considered. The following two theorems are proved:

Theorem 1: Let conditions A be fulfilled for strongly degenerate equation (1) and, in addition,

$$\int_0^{+\infty} \exp\left\{\int_0^{\tau} \beta(s)\,ds\right\} d\tau < \infty,$$

$$|f(t,x)| \leqslant g(x) \leqslant \frac{\text{const}}{(1+x)^{\varkappa}} \exp\left\{\int_0^{x} \beta(s)\,ds\right\},$$

where $\varkappa = \text{const} > 1$, $\beta(x) = \max\limits_{0 \leqslant t \leqslant T} b(t, x)$. Then equation (1) has in Q a

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DZHURAYEV, T. D., Matematicheskiye Zametki, Vol 12, No 5, Nov 72, pp 643-652

unique limited solution satisfying the conditions

$$u|_{x=0} = \varphi(t), \quad \lim_{x\to\infty} u(t, x) = u_0,$$

where φ (t) is a continuous function given in $0 \leqslant t \leqslant T$, with φ' (t) bounded, and u_0 is a given constant.

Theorem 2: Let conditions A be fulfilled for strongly degenerate equation (1) and, in addition,

$$\int_0^{+\infty} \exp\left\{\int_0^\tau \beta(s)\, ds\right\} d\tau = +\infty,$$

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DZHURAYEV, T. D., Matematicheskiye Zametki, Vol 12, No 5, Nov 72, pp 643-652

where

$$\beta(x) = \min_{0 \leqslant t \leqslant T} b(t, x).$$

Then equation (1) has in Q a unique limited solution satisfying only the condition

$$u|_{x=0} = \varphi(t).$$

The author thanks S. N. KRUZHKOV and O. A. OLEYNIK for useful advice.

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1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SOLUTION OF THE PROBLEM CONCERNING EXTENSION OF THE BOUNDARY LAYER FOR THE NONSTATIONARY FLOW OF A COMPRESSIBLE FLUID -U-

AUTHOR--DZHURAYEV, T.D.

D

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UZBEKSKOI SSR, IZVESTIIA, SERIIA FIZIKO-MATEMATICHESKIKH NAUK, VOL. 14, NO. 2, 1970, P. 28-33

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BOUNDARY LAYER EQUATION, FLOW ANALYSIS, VISCOUS FLUID, INCOMPRESSIBLE FLUID, PRANDTL NUMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1255 STEP NO--UR/0166/70/014/002/0028/0033

CIRC ACCESSION NO--AP0124906

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124906

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF A PROBLEM CONCERNING EXTENSION OF THE BOUNDARY LAYER FOR A SYSTEM OF EQUATIONS CORRESPONDING TO THE NONSTATIONARY LONGITUDINAL FLOW OF A VISCOUS INCOMPRESSIBLE FLUID AROUND A PLATE AT A PRANDTL NUMBER EQUAL TO UNIT. IT IS PROVEN THAT UNDER CERTAIN SPECIFIED CONDITIONS THE SOLUTION OF THIS PROBLEM EXISTS EITHER FOR ALL VALUES OF TIME NEAR THE BEGINNING OF FLOW AROUND THE PLATE OR FOR A CERTAIN INTERVAL OF TIMES ALONG THE ENTIRE PLATE. THE RELATION BETWEEN THE TEMPERATURE AND VISCOSITY IS ARBITRARY, AND THE PRESENCE OF ARBITRARY SUCTION OR BLOWING THROUGH THE PLATE IS PERMITTED. FACILITY: AKADEMIIA NAUK UZBEKSKOI SSR, INSTITUT MATEMATIKI, TASHKENT, UZBEK SSR.

UNCLASSIFIED

USSR

UDC: 8.74

KADYROV, Kh., DZHURAYEV, Yu.

"Principle of Data Compression Without Loss of Accuracy"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works), vyp. 46, Tashkent, 1971(1972), pp 100-102 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V518)

[No abstract]

1/1

USSR

UDC 582.285(252.33:575.4)

KOSHKELOVA, Ye. N., and DZHURAYEVA, Z., Institute of Botany, Academy of Sciences Turkmen SSR

"The Species Composition and Some Biological Properties of Rust Fungi in Central Karakum"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 5, 1971, pp 23-26

Abstract: Fourteen species of rust fungi infesting plants in Central Karakum were identified and investigated. They belong to the genera Melampsora, Puccinia, and Aecidium, family Melampsoraceae, order Uredinales, and class Basidiomycetes. In Turkmenia, a new host plant, Euphorbia cheirolepis Fisch. et Mey., harboring Melampsora euphorbiae, was discovered. The growth cycle and the distribution as well as the damage done by each of these species are described. In the various regions of Central Karakum, 5 to 54% of plants are affected with this fungus disease, creating a serious danger to pastures.

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1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THEORY OF DISCRETE AUTOMATIC SYSTEMS REVIEW -U-

AUTHOR-(02)-DZHURI, YE.I., TSYPKIN, YA.Z.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 6, PP 57-81

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CONTROL THEORY, DISCRETE AUTOMATION, PULSE SIGNAL, AUTOMATIC CONTROL R AND D

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1008 STEP NO--UR/0103/70/000/006/0057/0081

CIRC ACCESSION NO--AP0124667
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS UNITED THEIR EFFORTS IN WRITING A REVIEW OF THE THEORY OF DISCRETE AUTOMATIC SYSTEMS. THIS REVIEW EMBRACES THE MAIN TRENDS OF THE THEORY AND INCLUDES THE FOLLOWING SECTIONS: THE DESCRIPTION OF PULSE SYSTEMS, THE SYNTHESIS OF LINEAR PULSE SYSTEMS, THE ANALYSIS OF NONLINEAR PULSE SYSTEMS, THE SYNTHESIS OF OPTIMAL NONLINEAR PULSE SYSTEMS, SEQUENCE MACHINES, PULSE SYSTEMS WITH A RANDOM REPETITION PERIOD AND ADAPTIVE PULSE SYSTEMS. IN EACH OF THE ABOVE MENTIONED SECTIONS THERE IS GIVEN A SHORT ESTIMATION OF THE WORKS KNOWN TO THE AUTHORS, THE WORKS LISTED IN THE CORRESPONDING SECTION. THE AIM OF THE ARTICLE LIES IN DESCRIBING THE DEVELOPMENT AND THE STATE OF RESEARCH IN THE FIELD OF THE THEORY OF DISCRETE SYSTEMS WITHIN THE LASY TWENTY YEARS.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--COLORING MECHANISM OF CERIUM CONTAINING GLASSES -U-

AUTHOR-(03)-BOGDANOVA, G.S., DZHURINSKIY, B.F., ANTONOVA, S.L.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 776-80

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CERIUM GLASS, OPTIC PROPERTY, CERIUM COMPOUND, COMPLEX COMPOUND, SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2031 STEP NO--UR/0363/70/006/004/0776/0780

CIRC ACCESSION NO--AP0125619

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM BY WHICH CE IMPARTS COLOR TO GLASSES WAS STUDIED AS WAS THE POSSIBILITY OF USING THIS PIGMENT TO PRODUCE YELLOW ORANGE LIGHT FILTERS HAVING PREDTD. AND REPRODUCIBLE SPECTRAL PROPERTIES. THE EFFECT OF FOUNDING TIME ON SPECTRAL PROPERTIES OF THESE GLASSES AND ON THE CONCN. OF THE QUADRIVALENT CE ICN WAS INVESTIGATED. COMPLEX GROUPS CE PRIMEIV O CE PRIMEIII FORM IN CE CONTG. GLASSES. THE SPECTRAL ABSORPTION OF CE CONTG. GLASSES, AS DEPENDENT ON THE CONCN. OF THE CE CE COMPLEX FOLLOWS BEER'S LAW. THE SPECTRAL CURVE OF THE MOLAR ABSORPTIVITY FOR THE CE CE COMPLEX, WITH ITS MAX. PROBABLY LOCATED IN THE UV SPECTRAL REGION, FOLLOWS A SLOPING PATH. FACILITY: GOS. NAUCH.-ISSLED. INST. STEKLA, MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DOUBLE BORATES OF RARE EARTH ELEMENTS AND BARIUM OF THE COMPOSITION LN SUB2 BA SUB3 (BO SUB3) SUB4 -U-
AUTHOR-(03)-DZHURINSKIY, B.F., ALIYEV, O.A., TANANAYEV, I.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 592-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BORATE, RARE EARTH METAL, BARIUM COMPOUND, LANTHANUM, LUTETIUM, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0908 STEP NO--UR/0363/70/006/003/0592/0593

CIRC ACCESSION NO--AP0118077
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118077
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINDLE CRYSTALS OF LA SUB2 BA SUB3(BO SUB3)SUB4 WERE PREPD. UNDER SYNTHESIS CONDITIONS CLOSE TO THOSE FOR THE SYNTHESIS OF DOUBLE BORATES OF RARE EARTHS AND SR AT 1100DEGREES. THE LIQ. AND THE SOLID PHASE WERE ANALYZED RELATIVE TO THE LA AND B CONTENT. THE LA SUB2 BA SUB3(BO SUB3)SUB4 CRYSTALS ARE COLORLESS AND ARE STABLE TO A SHARP DROP IN THE TEMP. FROM 1100DEGREES TO ROOM TEMP. LU SUB2 BA SUB3(BO SUB3)SUB4 WAS SYNTHESIZED BY GRADUALLY HEATING TO 700-800DEGREES A STOICHIOMETRIC MIXT. OF LU SUB2 O SUB3, H SUB3 BO SUB3, AND BACO SUB3 IN A PT CRUCIBLE. THE MIXT. WAS HELD AT 700-800DEGREES FOR 6 HR, WHEREUPON IT WAS COOLED, GROUND, AND FIRED AT 1000DEGREES FOR 3 HR. PERIODICALLY THE MIXT. WAS TAKEN OUT OF THE FURNACE, COOLED, CAREFULLY GROUND, AND AGAIN FIRED. THE IR ABSORPTION SPECTRA FOR LA SUB2 BA SUB3(BO SUB3) SUB4 AND LU SUB2 BA SUB3(BO SUB3)SUB4 ARE PRESENTED. THE M.PS. WERE 1400DEGREES FRO LA SUB2 BA SUB3(BO SUB3) SUB4 AND 1100DEGREES FOR LU SUB2 BA SUB3(BO SUB3)SUB4.
FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC (546.36'185+546.732"185):542.3

KRIVOVYAZOV, YE. L., DZHURINSKIY, V. F., RADHIMBEKOVA, KH. M., and VOSKRESENSKAYA, N. K., Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Academy of Sciences USSR

"Density of Fused Cesium and Cobalt Metaphosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 8, 1972, pp 1505-1506

Abstract: The authors used the method of hydrostatic weighing to measure the density of fused Cs and Co metaphosphates. Based on the data produced on the density of fused Cs and Co metaphosphates, using the method of least squares, the equations for density polytherms were calculated. The molar volumes of the Na, K, and Cs metaphosphates increase in that order at their melting points with increasing cation radius. The temperature coefficients of density for Na, K, and Cs metaphosphates are less than for the corresponding nonmolymerized simple salts. Even stronger compacting of structure can be expected for Zn and Co metaphosphates.

1/1

1/2 051 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE HURLING OF A BODY BY A CONDUCTING GAS IN A GRAVITY FIELD -U-

AUTHOR--DZHUSUPOV, K.

D

COUNTRY OF INFO--USSR

SOURCE--MOSKOVSKII UNIVERSITET. VESTNIK, SERIIA I-MATEMATIKA, MEKHANIKA, VOL. 25, JAN.-FEB. 1970, P. 102-107
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CONDUCTING GAS, MOTION EQUATION, GRAVITATION FIELD, BLUNT BODY, COMPRESSION SHOCK WAVE, RAREFRACTION SHOCK WAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1630 STEP NO--UR/0055/70/025/000/0102/0107

CIRC ACCESSION NO--AP0054476

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720016-1"

2/2 051 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0054476

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE PROBLEM OF THE HURLING OF A BODY BY AN IDEALLY CONDUCTING GAS IN A CONSTANT GRAVITY FIELD IN THE PRESENCE OF A MAGNETIC FIELD. ONE DIMENSIONAL MOTION IN A SEMIINFINITE TUBE OF CONSTANT CROSS SECTION IS INVESTIGATED. SOLUTIONS FOR RAREFRACTION AND REFLECTED WAVES PRODUCED BY THE MOTION ARE OBTAINED FOR AN ADIABATIC EXPONENT OF 3. THE LAW OF MOTION OF THE BODY BEING HURLED IS DERIVED, AND THE PRESSURE ON THE CHAMBER WALLS IS FOUND AS A FUNCTION OF TIME. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC: 621.37

DZHUVARLY, Ch. M., Academician, DZHAFAROV, E. M., Institute of Physics, Academy of Sciences of the Azerbaydzhan SSR

"Accounting for Sagging of Overhead Transmission Lines in Calculation of Transient Electromagnetic Processes"

Baku, Doklady Akademii Nauk AzerbSSR, Vol 28, No 1, 1972, pp 7-9

Abstract: Computational formulas are derived for determining the voltages and currents in an electric power transmission line with regard to sagging of the wires between towers and also with regard to skin effect. The proposed method is readily computerized for calculation of various wave processes and for determining the effect of wire sagging on the pattern of development of overvoltages.

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USSR

UDC 621.315.1

DZHUVARLY, Ch. M., Academician of the Azerbaydzhan SSR Academy of Sciences, Doctor of Technical Sciences, Professor, SALAM-ZADE, M. M., Candidate of Technical Sciences, Docent, DZHAFAROV, E. M., Engineer, Azerbaydzhan Petroleum and Chemistry Institute imeni M. Azizbekov

"Parameters of the Mathematical Model of a Surface Effect in the Ground and Conductors for Investigating Wave Processes in Electric Transmission Lines on Digital Computers"

Minsk, Izvestiya vysshikh uchebnykh zavedeniy -- Energetika, No 5, 1972, pp 19-25

Abstract: The parameters of the mathematical model of the surface effect in the ground and conductors for investigating wave processes in 330-750 kilovolt electric power transmission lines are presented for the presence of commutations and thunderstorm effects. Recommendations are made with respect to selecting the optinal schematic for the mathematical model. The presented result can be used for more precise consideration of the surface effect when investigating various wave processes leading to overvoltages in the high and superhigh voltage electric power transmission lines. The initial data and parameters of the models are presented for two and three parallel R, L branches for commutation processes, three matrix R, L branches for single-circuit

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USSR

DZHURARLY, DH. M., et al., Izvestiya vysshikh uchebnykh zavedeniy -- Energetika, No 5, 1972, pp 19-25

transposed electric power transmission lines without considering lightning protective cables and models of three matrix R, L branches for single-circuit 330-750 kilovolt overhead electric power transmission lines. The maximum error in the model of multiphase overhead electric power transmission lines is within the limits of 5%.

2/2

DZIDOLIKAS K.P.

Gloria

NEW METHODS OF STUDYING AND INCREASING THE DYNAMIC ACCURACY OF PRECISION JIG BORING MACHINES

K. P. Dzidolikas (Kaunas)

See NASA technical translation NASA TT F-694 May 1972

This work analyzes an original device for measurement of the oscillations of a spindle, the accuracy of measurement of which is independent of the geometric errors in the shape of the support. It contains the sensor made with two series-connected capacitances, one of which changes as the spindle oscillates. An oscillogram records only the oscillations of the spindle which influence the accuracy and quality of operation directly.

Using this device, a study was made of the oscillations of a range of spindles of precision jig boring machines with an optical coordinate reading system. The realizations produced were computer processed. This work presents characteristic correlation functions and spectral densities of the oscillating process both during idle and during operation. This allowed the predominant sources of oscillations of the spindle to be determined.

In constructing the dynamic model of the units of the tool for the entire tool as a whole, various methods are used to determine the rigidity characteristic of elements of the tool. The work describes an original method for determining circular compliance diagrams, allowing a continuous curve of circular rigidity to be produced clearly on the screen of the oscilloscope. The method is based on the use of centrifugal forces as the loading forces and the recording of deformations in the plane using two capacitive sensors connected with a converting apparatus. This method is used to study the contact and natural deformations of elements of the machine and construct a circular diagram of the compliance of the spindles of machines relative to the tables.

USSR

UDC 532.5:621.22

DZIDZIGURI, A. A., SHUBITIDZE, K. C., TUTBERIDZE, L. I.

"On the Stability of the Operating Modes of Centrifugal Pumps"

V sb. Gorn. mekh. i rudnich. aerologiya (Mining Mechanics and Ore Aerology -- Collection of Works), Tbilisi, "Metsniyereba", 1972, pp 37-42 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B754)

Translation: The stability of the operating modes of a system consisting of a centrifugal pump, a pressure line, a certain air volume, and a gate is investigated. Two differential equations are compiled for the nonstationary delivery motion in the line and boundary conditions are set up at the ends of the line. Appropriate simplifications of the initial equations and boundary conditions are introduced for various versions of the system and approximate stability criteria are obtained. P. S. Solomakhova.

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USSR UDC 669.74'782'891.018.9

ARSENISHVILI, A. YU., DZHAPARIDZE, N. V., DZIDZISHVILI, R. N., KATAMADZE, N. P., TSKITISHVILI, A. A., CHOLOKAVA, M. V., CHKHENDZE, E. A.

"Mastery of Industrial Preparation of the Silicon-Manganese-Calcium Alloy"

V sb. Marganets. Dobycha, obogashch. i pererabotka (Manganese. Extraction, Beneficiation and Refining -- collection of works), No 3 (28), Tbilisi, 1971, pp 47-59 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G261)

Translation: Results of three series of experiments in making Mn alloy with Si and Ca in 2,500 and 11,150 kilovolt ampere electric furnaces are discussed. The initial charge comprised a mixture of slag obtained when making medium carbon FeMn with quartzite, lime, and coke breeze. The necessary conditions for normal conduct of the alloy-making process are the following: exact weighing of the charge components and observation of the schedule for discharge of the alloy from the electric arc furnace. The following extraction in the alloy was obtained: 91% Mn, 73.38% Si, 32.93% Ca, 41.1% Al, 29.9% Mg, and 54.2% P with an alloy composition of 23.01% Mn, 54.13% Si, 9.7% Ca, 1.58% Al, 0.79% Mg, and 0.015% P. The consumption of electric power per ton of alloy was 13,195 kilowatt-hours. There are 6 tables.
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USSR UDC: 8.74

TARKASHVILI, Ts. T., DZIGAVA, B. N.

"Equalization by the Method of Least Squares"

V sb. Elektron. i ionnyye protsessy v tverd. telakh (Electron and Ion Processes in Solids--collection of works), No 4, Tbilisi, "Metsniyereba", 1971, pp 256-265 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V566)

[no abstract]

1/1

USSR UDC 543.70

DZIOMKO, V. M., OSTROVSKAYA, V. M., and KON'KOVA, O. V., All-Union Scientific Research Institute of Chemical Reagents and Ultrapure Chemical Substances, Moscow, State Committee for Chemistry USSR

"The Extraction-Photometric Determination of Scandium with Use of 1,5-Di-(2'hydroxy-3', 5', 6'-trichlorophenyl)-3-acetylformazan"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XXV, No 2, Feb 70, pp 267-271

Abstract: A number of high-sensitivity reagents proposed for use in the spectrophotometric determination of scandium (xylenol orange, etc.) are not very effective in practice if thorium, zirconium or any of a number of other substances are present. In view of the high selectivity of DHTRICHAZ (expansion shown in article title) for scandium ions, the authors developed a new extraction-photometric method based on this compound.

Scandium was determined in both wolframite and tungsten samples, using DHTRICHAZ as a reagent. The scandium-reagent stoichiometric ratio was found to be 1:2; the molar extinction of the complex, $(2.70 \pm 0.67) \cdot 10^4$ for 675 nm. The authors also suggest a quantitative method for determining scandium in tungsten, wolframite, slag and salts, based upon tests which they ran.

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1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF SCANDIUM WITH 1,5,BIS(2,HYDROXY,3,5,6,TRICHLOROPHENYL),3,ACETYLFORMAZAN -U-
AUTHOR-(03)-DZIOMKO, V.M., OSTROVSKAYA, V.M., KONKOVA, O.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 267-71

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL ANALYSIS, SOLVENT EXTRACTION, SCANDIUM, PHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1918 STEP NO--UR/0075/70/025/002/0267/0271

CIRC ACCESSION NO--AP0115732
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115732

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.

1,5,BIS(2,HYDROXY,3,5,6,TRICHLOROPHENYL),3,ACETYLFORMAZAN (I) WAS SYNTHETIZED AND STUDIED AS A REAGENT FOR SC DETN. I IS A CINNAMON COLORED POWDER, M.P. 202.3DEGREES AFTER RECRYSTN. FROM BOILING C SUB6 H SUB6. I REACTS WITH SC IN A 2:1 MOLAR RATIO; MAX. ABSORBANCE OF THE COMPLEX IS AT 675 NM AND THE MOLAR ABSORPTIVITY IS (2.70 PLUS OR MINUS 0.67) TIMES 10 PRIME4. MAX. ABSURBANCE OCCURS IN THE PH RANGE 4.7-6.5. A QUANT. METHOD IS DESCRIBED FOR THE DETN. OF SC IN WOLFRAMITE IN WHICH THE SC IS EXTD. WITH A SOLN. OF I IN ETOAC, AND A QUAL. METHOD FOR SC DETECTION IN SALTS AND SLAGS. TH(IV), ZR(IV), Y(III), LA(III), ND(III), PR(III), SM(III), ER(III), AND MN(II), 1000 FOLD AMTS., AND AL(III), BI(III), AND IN(III), 25 FOLD AMTS., DO NOT INTERFERE; CU(II), CO(III), FE(III), GA, ZN, PB(II), HG(II), HG(I), V(V), F PRIME NEGATIVE, SO SUB4 PRIME2 NEGATIVE, AND PO SUB4 PRIME3 NEGATIVE DO.

FACILITY: ALL UNION SCI. RES. INST. CHEM. REAGENTS SPEC. PURE CHEM., MOSCOW, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--IONIC FLOTATION OF DICHROMATE ION USING A BIS QUATERNARY AMMONIUM CATION -U-

AUTHOR-(02)-DZIOMKO, V.M., SIDENKO, Z.S.

D

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 436-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CHROMATE, QUARTERNARY AMMONIUM SALT, BROMIDE, WASTE WATER CONVERSION, WATER PURIFYING COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0454 STEP NO--UR/0080/70/043/002/0436/0439

CIRC ACCESSION NO--AP0104067

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0104067
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FRESHLY PREPD. AQ. SOLN. OF N,N,N',N' TETRAMETHYL N,N' DIDODECYLHEXAMETHYLENEDIAMMONIUM DIBROMIDE (I) IS RECOMMENDED FOR REMOVAL OF CHROMATES IN WASTE WATER. BEST RESULTS WERE ACHIEVED AT PH 5 AND AT A I-CHROMATE RATIO OF 3. THE RESULTING COMPLEX SETTLES OUT BUT IS SOL. IN BASIC WASTE. THE ORANGE RED COLLOIDAL PPT. CAN BE REMOVED BY IONIC FLOTATION. THE CHROMATE CONTENT OF WASTE WATER CAN BE DIMINISHED TO 0.01 MG-L.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF A VANADIUM CATALYST FOR THE OXIDATION OF SULFUR DIOXIDE -U-

AUTHOR-(04)-BORESKOV, G.K., OZISKO, V.A., SAMAKHOV, A.A., YUDINA, T.D.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,737

REFERENCE--TOKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL CATALYST, CHEMICAL PATENT, CHEMICAL SYNTHESIS, VANADIUM, OXIDATION, SULFUR DIOXIDE, SILICA GEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1742 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132008

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 014

CIRC ACCESSION NO--AA0132008

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A V CATALYST FOR SO SUB2 OXIDN. WAS OBTAINED BY MIXING SILICA GEL WITH NA SUB2 SO SUB4, K SUB2 SO SUB4, AND V COMPDS. TO OBTAIN A CATALYST ACTIVE AT LOW TEMPS. AT TO PROTECT THE EQUIPMENT FROM PREPG. CATALYSTS FROM CORROSION, A GEL OF HYDRATED V SUB2 O SUB5 OBTAINED BY THE ADHESION OF DIL. H SUB2 SO SUB4 TO A SOLN. OF K VANADATE TO CONST. PH 4 PLUS OR MINUS 1 WAS FOR A V COMPD.

FACILITY: INSTITUTE OF CATALYSIS, ACADEMY OF SCIENCES, U.S.S.R.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF THE THICKNESS OF A FILM OF ACTIVE COMPONENT ON THE ACTIVITY OF VANADIUM CATALYSTS IN THE OXIDATION OF SULFUR DIOXIDE -U-

AUTHOR-(04)-BORESKOV, G.K., DZISKO, V.A., TARASOVA, O.V., BALAGANSKAYA, G.P.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 181-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST, SULFUR OXIDE, VANADIUM, CATALYTIC OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1459 STEP NO--UR/0135/70/011/001/0181/0186

CIRC ACCESSION NO--AP0120246

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120246

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDN. OF SO SUB2 ON V CATALYSTS TAKES PLACE WITHIN THE FILM OF ACTIVE LIQ. CATALYST COMPONENT, CONTG. V SUB2 O SUB2 TIMES NK SUB2 O TIMES MSO SUB3 WHERE N EQUALS 2-4 AND M DEPENDS ON REACTION CONDITIONS AND ON THE N VALUE. THE THICKNESS OF THE ACTIVE CATALYST FILM AT WHICH THE OXIDN. GOES TO COMPLETION DEPENDS ON THE REACTION TEMP. AND THE COMPN. OF THE REACTION MIXT. AT LOWER TEMPS., THE CRIT. THICKNESS OF THE FILM DECREASES AND AT HIGHER TEMP. IT INCREASES. AT 420DEGREES, INCREASE OF CATALYTIC ACTIVITY WITH INCREASING K SUB2 O-V SUB2 O SUB5 MOLE RATIO OCCURS DUE TO AN INHIBITION OF SOLID PHASE CRYSTN. IN THE PRESENCE OF AN EXCESS OF K SUB2 O. IN ADDN. TO THIS, AT LOWER TEMP., REDN. OF V SUB2 O SUB5 TAKES PLACE TO A LESSER DEGREE. MAX. FILM THICKNESSES FOR REACTIONS AT 485 AND 420DEGREES ARE GIVEN. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--HYDROGEN BONDS AND INFRARED SPECTRA OF H COMPLEXES -U-

AUTHOR-(03)-ODINOKOV, S.E., DZIZENKO, A.K., MASHKOVSKIY, A.A.

COUNTRY OF INFO--USSR

D

SOURCE--SPECTROSC. LETT. 1970, 3(1), 1-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGEN BONDING, COMPLEX COMPOUND, BENZENE DERIVATIVE, HYDROXYL RADICAL, PYRIDINE COMPLEX, DIMERIZATION, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1989 STEP NO--US/0000/70/003/001/0001/0006

CIRC ACCESSION NO--AP0112953
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112953

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE H BOND ENERGY OF A SPECIES CONSISTING OF BZOH H BONDED WITH PYRIDINE, WHICH WAS FORMED BY REACTING DIMERIC BZOH WITH PYRIDINE IN CCl SUB4, WAS ESTD. BY USING THE REACTION EQUIL. CONST. THE EQUIL. CONST. WAS DETD. BY IR SPECTROSCOPY, BY USING THE BANDS AT 1900 AND 1420 CM PRIME NEGATIVE1 TO DET. THE CONCNS. OF DIMERIC BZOH AND OF THE BZOH PYRIDINE COMPLEX, RESP. THE ENERGY OF THE H BOND BETWEEN BZOH AND PYRIDINE WAS DETD. AS 12.55 KCAL PER MOLE, AS COMPARED WITH A VALUE OF 12.77 KCAL-MOLE CALCD. IN ACCORDANCE WITH THE INTENSITY RULE OF A. B. JOHANSEN (1965). FACILITY: INST. BIOL. ACTIVE SUBST., VLADIVOSTOK, USSR.

UNCLASSIFIED

USSR UDC: 616-001.34-07:616.16-008.6

DZIZINSKIY, A. A. and TEKENEVA, T. I., Medical Institute, Sanitation Institute, Novosibirsk

"Capillary Permeability in Patients With Vibration Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1971, pp 43-45

Abstract: Capillary permeability, fibrinolysis, and heparin levels were investigated in 76 persons with stage 1 or stage 2 vibration sickness. Capillary permeability increased with the severity of the disease. Fibrinolytic activity increased in stage 1 and then decreased in stage 2 to the point of complete inhibition. Similarly, the heparin level rose in stage 1 and fell in stage 2. Regarding vibration as a "chronic stressor," the authors interpret the increased capillary permeability and activation of fibrinolysis in the initial stages of the disease as an adaptation mechanism. The subsequent decrease in fibrinolysis and heparin is apparently due to exhaustion of the enzyme systems resulting from impairment of neurohumoral regulation. The authors state in conclusion that their findings led them to administer heparin and iodine-containing preparations to patients to stimulate fibrinolysis, raise the blood heparin level, and normalize capillary permeability. The preliminary results are promising.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CAPILLARY PERMEABILITY IN PATINETS WITH ATHEROSCLEROSIS AND HYPERTENSIVE DISEASE -U-
AUTHOR-(02)-DZIZINSKIY, A.A., KOCHERGINA, T.K.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 15-18

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CAPILLARY, PERMEABILITY MEASUREMENT, ATHEROSCLEROSIS, HYPERTENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1906 STEP NO--UR/0475/70/000/006/0015/0018

CIRC ACCESSION NO--AP0129255
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0129255
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW TEST IS PROPOSED ENABLING TO DETECT DECREASED PERMEABILITY OF BLOOD CAPILLARIES. PATIENTS WITH ATHEROSCLEROSIS AND HYPERTENSIVE DISEASE SHOW ALREADY AT EARLY STAGES OF THE DISEASE A DECREASE OF THE ADAPTIVE POSSIBILITIES OF THE BLOOD CAPILLARIES. DISORDERS OF CAPILLARY PERMEABILITY ARE OF MAJOR SIGNIFICANCE IN THE PATHOGENSIS AND CLINICS OF THE ABOVE DISEASES AND THEREFORE A SEARCH FOR EFFICIENT METHODS OF THEIR TREATMENT IS NECESSARY. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII LECHEBNOGO I PEDIATRICHESKOGO FAKUL'TETOV NOVOSIBIRSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--FUNCTIONAL CONDITION OF BLOOD CAPILLARIES PERMEABILITY IN CHRONIC NONSPECIFIC DISEASES OF THE LUNGS -U-

AUTHOR-(02)-DZIZINSKIY, A.A., POLYAKOVASELIVANOVA, N.D.

CCUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 67-71

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD, CAPILLARY, PERMEABILITY MEASUREMENT, LUNG, PULMONARY DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1891 STEP NO--UR/0504/70/042/006/0067/0071

CIRC ACCESSION NO--AP0129246

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129246

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS EXAMINED 110 PATIENTS WITH CHRONIC NONSPECIFIC DISEASES OF THE LUNGS AND 30 HEALTHY INDIVIDUALS (CONTROL GROUP). PERMEABILITY OF BLOOD CAPILLARIES WAS STUDIED BY A CAPILLARO VENOUS METHOD USING A HYDROSTATIC TEST, OXYGEN TENSION IN THE TISSUES PO SUB2 BY A POLAROGRAPHIC METHOD (RA,3) IN OXYGEN LOAD. A COMPLEX OF CURRENT INSTRUMENTAL AND BIOCHEMICAL METHODS OF INVESTIGATION OF PATIENTS WITH PULMONARY DISEASES IS USED. INVESTIGATIONS WERE CONDUCTED WITH DUE ACCOUNT FOR THE STAGES OF THE DISEASE, PHASES OF EXACERBATION AND REMISSION, SYNDROME OF PULMONARY AND CARDIAC INSUFFICIENCY, AGE PECULIARITIES OF PATIENTS AND DURATION OF THE DISEASE. THERE ARE TWO PHASES IN THE CONDITION OF PERMEABILITY OF CAPILLARO CONNECTIVE TISSUE STRUCTURES, BESIDES THE PRESENCE OF THE "CAPILLARO TROPHIC INSUFFICIENCY" SYNDROME IS REVEALED. A CONCLUSION IS MADE CONCERNING A POSSIBLE PARTICIPATION OF THIS SYNDROME IN THE DEVELOPMENT OF CARDIO PULMONARY INSUFFICIENCY, TISSUE HYPOXY, DYSTROPHIC AND SCLEROTIC CHANGES. IN ITS TERN, THE SYNDROME OF PULMONARY AND CARDIAC INSUFFICIENCY MADE AN INFLUENCE ON THE FUNCTIONAL CONDITION OF PERMEABILITY, THE LATTER DEPENDING UPON THE PATIENT'S AGE (A DROP IN ADAPTIVE ABILITY IN SENILE PATIENTS) AND DURATION OF THE DISEASE. IN THE GIVEN PATHOLOGY A DISORDER OF MICROCIRCULATION AND SUBSTANTIAL CHANGES IN THE ACTIVITY OF A NUMBER OF ENZYMES AND BIOLOGICALLY ACTIVE SUBSTANCES PARTICIPATING IN THE REGULATION OF PERMEABILITY PLAY A DEFINITE ROLE. FACILITY: KAFEDRY FAKUL'TETSKOY TERAPII LECHEBNOGO I PEDIATRICHESKOGO FAKUL'TETOV NOVOSIBIRSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR UDC:621.762

BOROK, B. A., DZNELADZE, ZH. I., SHCHEGOLEVA, R. P., AKULOV, A. N., OSTROVSKAYA, E. N., GOLUBEVA, L. S., RABINOVICH, YE. M., CHERNOBYL'SKIY, I. G. and MARTIYNENKO, T. F., Central Scientific Research Institute for Ferrous Metallurgy imeni I. P. Bardin, Scientific Research Center for Electronic Computer Equipment

"Technology of Production of Permalloy-Type Alloys"

Kiev, Poroshkovaya Metallurgiya, No 12, Dec 73, pp 67-71

Abstract: A technology has been developed for producing magnetically soft permalloy (iron-nickel)-type alloys by powder metallurgy methods, achieving accuracies of reproduction of chemical composition of ±0.3% (in place of ±0.5%), distinguished by low gas content, high homogeneity in microvolumes and zero magnetostriction. The possibility in principle of using sintered alloys for the manufacture of magnetic films in place of similar alloys produced by melting is established. The technology developed is used to create trinary and more complex alloys with high magnetic parameters, designed for the manufacture of magnetic film matrices for computer memory devices.

1/1

Analysis and Testing

USSR UDC 669.218-621.775

BIBINOV, S. A., DZODZIYEV, G. T., VITRYANYUK, V. K., PETRENKO, V. D., Uzbek Refractory and Heat-Resistant Metals Combine, Kiev Polytechnic Institute

"Expressed Determination of the Content of Total Carbon in Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 6, Jun 72, pp 102-104.

Abstract: The method for determination of the quantity of total carbon in titanium carbide suggested is based on the absorption of soft gamma-radiation by the specimen being analyzed. One of the most important specific features of this method is that the mass absorption factor for soft gamma-radiation is proportional to the fifth power of the atomic number of the absorber. The sensitivity of an experimental model of the device suggested was so great that the carbon content could be determined with an error of not over 0.15%. Three to five minutes are required for analysis. The specimens analyzed are not damaged.

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USSR

UDC: 621.762

SAMSONOV, G. V., DZODZIYEV, G. T., KLYACHKO, L. I., VITRYANYUK, V. K., Kiev Polytechnical Institute, Uzbek Refractory and Heat Resistant Metal Combine

"Effect of Molybdenum on Properties of Metal Ceramic Hard TiC-Ni Alloys"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 57-60.

Abstract: A systematic study is performed of the effect of alloying TiC-Ni alloys with molybdenum over a broad concentration interval on their structure and physical-mechanical properties. It is established that the optimal properties are achieved with 20 vol. % Mo in the binder, the bending strength of the alloys varying between 105 and 180 kg/mm^2, depending on the total content of Mo, with hardnesses of from 92 to 85 HRA. As to wear resistance, the alloys with hardness with 92 HRA are two to three times superior to standard T15K6 alloy for cutting of type 50 steel.

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USSR UDC 621.762

SAMSONOV, G. V., SERGEYEV, N. N., DZODZIYEV, G. T., VITRYANYUK, V. K., and LATYAYEVA, L. V.

"Cermet Hard Alloys Based on Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

Abstract: Conditions for obtaining TiC-Ni alloys and their possible use in cutting tools are investigated. The mixture for obtaining the alloys was prepared in a mill lined with hard alloys, in an ethyl alcohol medium. The ball size was 3-5 mm. To investigate the effect of grain size of initial powders on the structure and properties of TiC-Ni alloys, the ratio of ball weight to mixture weight was taken as 6:1, 10:1, and 15:1, and the grinding time was varied from 48 to 144 hours. Short bars 5 x 5 x 35 mm in size were pressed from the mixtures obtained in the different grinding regimes. The bars were sintered in two stages: first (preliminary) centering to remove decomposition products of the plasticizing agent and for final reduction of the oxides (in dried hydrogen at 700°), and the second (final) sintering -- in a vacuum of 5 10^{-3} mm Hg at different temperatures and isothermal exposure times. It was shown that satisfactory mechanical properties (flexural strength = 107-115 kg/cm^2, and hardness -- 90-90.5 Rockwell Hardness, A-Scale) are shown by the alloy 80% TiC - 20% Ni obtained from finely pulverized mixtures

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APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720016-1"

USSR

SAMSONOV, G. V., et al, Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

by sintering in a vacuum of 5 10^{-3} mm Hg at 1300° and with isothermal exposure time of 30 minutes. It was found that for a 6:1 ratio of ball weight to mixture weight, even for maximum grinding time (144), following sintering the alloys exhibit porosity up to 0.4% and do not meet the requirements specified. The experimental alloys surpass the alloy T14K8 as to wear resistance by a factor of 1.6-1.8 for cutting using steel 50 at a rate of 120-180 m/min, and when used to reinforce drawing plates for wire-drawing, the wear-resistance of these alloys is superior to that of the VK6 alloy by a factor of 1.5-2.

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1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PHENOL GERMANATES -U-

AUTHOR-(04)-AKIMOV, V.K., BUSEV, A.I., DZOTSENIDZE, N.YE., ZAYTSEV, B.YE.

COUNTRY OF INFO--USSR

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHENOL, ORGANOGERMANIUM COMPOUND, PYROCATECHOL, DYE, COMPLEX COMPOUND, IR SPECTRUM, ORGANIC ARSENIC COMPOUND, HYDROXYL RADICAL, QUINOLINE, CRYSTAL

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2/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0112561
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING AQ. SOLNS. OF ESTERS OF GERMANIC ACID (WITH PYROCATECHOL, PYROGALLOL, GALLIC AND PYROGALLOLCARBOXYLIC ACIDS) WITH ORG. BASES (DIANTIPYRYLMETHANE, DIANTIPYRYLMETHYLMETHANE, DIPHENYLGUANIDINE, PH SUB4 ASCL, 3, PHENANTHROLINE, 8,HYDROXYQUINOLINE, BRILLIANT GREEN, METHYLENE BLUE, METHYL VIOLET AND CRYSTAL VIOLET) GAVE THE FOLLOWING COMPLEXES, WHICH WERE ANALYZED AND CHARACTERIZED BY IR SPECTRA (CURVES AND TABLES OF DATA SHOWN): TRICATECHYLGERMANATES OF: KIPHENYLGUANIDINE, O,PHENANTHROLINE, 8,HYDROXYQUINOLINE, TETRAPHENYLARSONIUM; SAME FOR TRIPYROGALLYL GERMANATE, SAME FOR TRIS(5,CARBOXYPYROGALLYL) GERMANATE ALONG WITH ANALOGS: DIANTIPYRYLMETHANE, DIANTIPYRYLMETHYLMETHANE, BRILLIANT GREEN, CRYSTAL VIOLET, METHYLENE BLUE, METHYLENE VIOLET; SAME FOR TRIS(4,CARBOXYPYROGALLYL) GERMANATE. ALL WERE COLORED CRYST. SOLIDS SPARINGLY SOL. IN H SUB2 O AND READILY SOL. IN AQ. ACIDS AND ME SUB2-NCHO.

USSR

UDC 681.142.35

DZODZUASHVILI, A.G. and KHABELASHVILI, G.I.

"Correction Codes for the Exchange of Information Among Computers"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 2, Nov 1970, pp 273-276

Abstract: Two basic kinds of error can occur during the transmission and processing of information in complex, computer-based information systems: 1) errors made in the computers themselves; and 2) errors made during the exchange of information among computers. Certain linear, q-fold codes are available for correcting errors of the second type, but unfortunately they involve division of polynomials, which requires a great deal of machine time. The authors of the present article propose two codes, comparatively easy to implement by means of computer programs, which correct arbitrary errors in a machine word and one adjacent word and in a machine word and two adjacent words, respectively. They briefly describe the type of coding and decoding utilized in both cases and conclude with a numerical example.

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USSR

UDC 669.018.298-426

LESHCHINER, A. M., ZHUCHIN, V. N., DZUGUTOV, M. YA., KORNEYEV, N. I., and OVSEPYAN, V. G., Elektrostal' Plant and the All-Union Scientific Research Institute of Aviation Materials

"Crack Removal in the Production of Wire Made From Precipitation Hardened Alloys"

Moscow, Stal', No 7, Jul 73, pp 652-654

Abstract: The processes of formation and nature of cracks were studied in a nickel-base alloy EP578 with the following chemical composition (in %): 18-20 Cr, 9-10.5 W, 2.75-3.25 Ti, 1.3-1.8 Al, 5.5-6.5 Co and 0.05 C (max). Deep longitudinal cracks (up to 2 mm in 5-mm diameter wire) along the entire wire length are sometimes formed. Investigation showed that this was linked with the occurence of structural transformations during heating and, in particular, with precipitation of the gamma-prime type strengthening phase Ni_3 (Ti,Al). Crack formation was also possible in the presence of surface defects and high residual tensile stresses. The first factor can be eliminated by rapid heating (at a rate not less than 250-300 deg/sec for suppression of aging), and the second factor -- by means of burnishing cold-drawn wire prior to its recrystallization, owing to which residual surface stresses become compressive stresses. Experiments also showed that cracks are formed in less-

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USSR

LESHCHINER, A. M., et al., Stal', No 7, Jul 73, pp 652-654

alloyed materials such as nickel-base alloys EP567 and NIMO-25 (66-69% Ni) with the following chemical composition:

	Cr	W	Mo	C	Si	Mn	Fe
EP567	14.5-16.5	3.0-4.5	15.0-17.0	0.03*	0.15*	1.0*	1.5*
NIMO-25	---	---	25.0-28.0	0.035*	0.25*	0.5*	balance

*-maximum

Precipitation of dispersed phases does not occur during heating of these alloys but proceeds by an ordering process. Thus, one of the necessary conditons of crack formation is the presence of structural transformations during heating. Four figures, four bibliographic references.

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USSR

UDC 669.15-194.3:539.374

DZUGUTOV, M. YA.

Moscow, Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov (Plastic Deformation of High-Alloy Steels and Alloys), Izd-vo "Metallurgiya," 1971, 424 pp

Translation of Foreword: Recent developments in machine building and instrument making are based on the wide use of special steels and alloys with a complex of various properties: high strength, heat resistance, high corrosion resistance in aggressive media, oxidation resistance at high temperatures, and high electric and magnetic characteristics. This complex of properties is dependent on the creation of a specific structural condition as a result of alloying and treatments, among which the pressure treatment of metals has a particular place. Problems of deformation mechanics and physical metallurgy concerning plastic deformation and the change of the material structure and properties effected by external forces constitute the basic principle of the theory and practice of the pressure treatment of metals. In the educational and special literature this material is artifically divided, which is a hindrance in raising the

USSR

DZUGUTOV, M. YA, Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

qualifications of specialists in the field of deformation of special steels and alloys. One of the features of this book is its detailed discussion of technologies of heating, forging, rolling, and pressing of articles of industrial composite-alloyed steels and alloys with regard to the physico-chemical processes and structural and property changes taking place in them. Another feature of the book, in working out the technology and plastic deformation, is the wider use of information on the plastic properties of materials of deformable bodies. Such a method makes it possible to create soundly based technological processes for pressure treatment of articles of steels and alloys and to select the most expedient methods and temperature-velocity deformation and cooling conditions of the articles in accordance with the structural characteristics of the alloys. The author expresses his sincere thanks to Candidate of Technical Sciences R. M. Golubchik for valuable advice in editing the manuscript. The author also thanks I. S. Pryanishnikov, V. N. Zhuchin,

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USSR

DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

V. V. Topilin, and S. G. Gapoyev for their help in preparing the manuscript.

Translation of Table of Contents:

USSR

DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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USSR

DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

USSR

DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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USSR

DZUGUTOV, M. YA., Plasticheskaya Deformatsiya Vysokolegirovannykh Staley i Splavov, Izd-vo "Metallurgiya," 1971, 424 pp

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USSR

UDC 621.73.01

DZUGUTOV, M. YA., STEPANOV, V. P., and MIRONOVA, V. P.

"Effect of Temperature and Degree of Deformation on Grain Size and Grain Variety in KhN77TYuR Alloy"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 2, Feb 71, pp 7-8

Abstract: This article contains a study of grain size in the KhN77TYuR alloy as a function of two basic technological factors -- temperature and degree of deformation. The experimental procedure is described and the results are presented in the form of graphs and photographs. These results provide a basis for considering that in practice, for any strain it is possible to obtain KhN77TYur alloy with a relatively uniform structure and optimal grain size by selecting the deformation temperature. For degrees of deformation of about 10%, the most favorable results are obtained when heating in the 1,060-1,170°C range, for degrees of deformation of about 25%, in the 950-1,170°C range, and for degrees of deformation of about 90%, heating in the 950-1,100°C range. It is pointed out that for approximately 25% deformation, uniform fine-grained structure is obtained in a broad temperature range of about ~200°C. These are the most favorable degrees of deformation for the

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USSR

DZUGUTOV, M. YA., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 2, Feb 71, pp 7-8

given alloy from the point of view of obtaining an optimal finite structure. The experiments also confirmed the presence of two critical deformation zones -- at low and high degrees of deformation -- for the KhN77TYuR alloy.

2/2

- END -

7676
CSO: 1842-M

USSR UDC 669.15'26-194

BIKEZIN, K. P., LYUBINSKAYA, M. A., TOPILIN, V. V., ZUBKO, A. M., and DZUGUTOV, M. Ya.

"Developing Production Techniques and Determining the Characteristics of Low-Carbon Kh28-VI Steel"

Moscow, Stal', No 2, Feb 71, pp 162-166

Abstract: This steel differs from the known Kh28 type by its especially low carbon content. While steels of high chromium content are known to be highly brittle at room temperature and are consequently limited in their application in objects operating under shock conditions, the low carbon content of Kh-28VI steel provides a shock strength of more than 20 kg/cm^2 with high resistance to corrosion. Its coefficient of thermal expansion is close to that of glass, so that it can be joined to that substance. Three techniques for obtaining iron with a carbon content of less than 0.01% had to be tested before the steel could be produced. Details of the process finally decided upon are given together with the steel's chemical composition, and the results of heat deformation tests are presented. There is a table of the steel's mechanical qualities for different

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BIKEZIN, K. P., Stal', No 2, Feb 71, pp 162-166

variations of its carbon content and treatment. The metal is manufactured in a vacuum induction furnace using high-purity iron and electrolytic chromium.

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USSR
MATHEMATICS
Numerical Analysis

USSR UDC 517.512+517.537+518.12

DZYADYK, V. K., Corresponding Member of the Academy of Sciences Ukrainian SSR, Institute of Mathematics, Academy of Sciences Ukrainian SSR

"On an Extremal Problem"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR -- Seriya A. Fizyko-Tekhnichni ta Matematychni Nauky, No 3, Apr 73, pp 299-300

Abstract: The existence and uniqueness of so-called factorized or Φ-extremal polynomials are established. Particular cases of such polynomials are Chebyshev, Zolotarev, Akhiyezer polynomials, and trigonometric polynomials of the form $\cos(nt+\alpha)$, where α is a real number. Any algorithm for the construction of Φ-extremal polynomials which satisfy certain conditions makes it possible to find -- much more simply than hitherto -- the numerical solution of the following problems:

1. The Markov-Bernstein problem of evaluating the module of the derivative of an algebraic and a trigonometric polynomial and the related problem of the generalization and effective construction of Zolotarev and Akhiyezer polynomials.

2. The problem of the construction of polynomials which are close to

USSR

DZYADYK, V. K., Dopovidi Akademii Nauk Ukrains'koi RSR -- Seriya A. Fizyko-Tekhnichni ta Matematychni Nauky, No 3, Apr 73, pp 299-300

polynomials of best approximation.

3. The problem of the effective, uniform, polynomial approximation of functions which are analytic in a circle and continuous in a closed circle.

4. The problem of the study and effective uniform approximation of functions which conformally and uniquely map a circle onto a simply connected region with a rectified boundary and satisfy normalization conditions.

In addition, such an algorithm makes possible a new and simple solution of the problem of approximate interpolation on a segment by means of algebraic and trigonometric polynomials.

2/2

USSR

UDC 546.27:546.78+546.821+546.281'26

DZYADYKEVICH, YU. V.

"Investigation of the Interaction of Boron and Silicon Carbide with Tungsten and Titanium"

Moscow, Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 44-46

Abstract: The interaction of boron fibers with atungsten substrate was studied at 1100° C with soak times from one to 10 hours. The compatibility of boron and silicon carbide fibers with a Ti-matrix was investigated at 900-1300° C with soak times of 1, 3, 5, and 10 hours. Investigation of boron fibers showed that, after annealing, the lower tungsten borides disappear: starting with WB, then W_2B, and after 10 hours of annealing at 1100°C, the fiber as a whole consists of WB_4, boron , and apparently, WB_{12}. Investigation of silicon carbide fibers showed that, after annealing, there were insignificant changes in the fibers even after 10 hours at 1200°C. A boron fiber starts to interact with a Ti matrix at 900° C; however after 10 hours the layers thickness of the intermediate phases does not exceed one micron. Above 1100° C a second layer develops having the form of a "solar crown." A silicon

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DZYADYKEVICH, YU. V., Neorganicheskiye Materialy, Vol 10, No 1, Jan 74, pp 44-46

carbide fiber starts to interact with the matrix at 1000° C, and an annular zone is formed around the fiber. Upon investigating the kinetics of interaction of boron and silicon fibers with a titanium matrix it was established that the thickness of the diffusion layer, in the 900-1300° C interval, increases by a parabolic law, whereupon the indicator n in the equation $x^n = K$, with increased temperature, increases from one to four for the B-Ti system and from two to five for SiC-Ti. By comparing the nature of boron and silicon carbide fiber interaction with titanium it was possible to note the higher stability of SiC fibers with both the matrix and substrate. SiC coatings can be recommended as a diffusion barrier in the production of boron fibers. SiC fibers are suitable for reinforcing Ti-base composites for long-time operation at 1000° C and short-time service up to 1300° C. Micro-x-ray spectral analysis was made by V. V. CORSKIY at the Institute of Metal Physics, Academy of Sciences Ukrainina SSR. One figures, one bibliographic reference .

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USSR

UDC 669.018.95

BURYKINA, A. L., DZYADYKEVICH, YU. V., GORSKIY, V. V., Institute of Problems of Material Sciences, Academy of Sciences Ukrainian SSR and Institute of Metal Physics, Academy of Sciences Ukrainian SSR

"Izvestigation of the Stability of B-Ti and SiC-Ti Composites During Extended Vacuum Heating"

Kiev, Poroshkovaya Metallurgiya, No 9, Sep 73, pp 74-76

Abstract: The interactions of B-Ti and SiC-Ti composites were studied at 900°C in a vacuum for periods extending up to as much as 300 hours. For the titanium-boron fiber composite it was established that annealing for longer than 50 hours causes a diffusion zone to be formed with a thickness up to 5 microns, and, for a period longer than 100 hours, characteristic formations in the form of a "solar corona" appear in the structure of the layer. Data from micro-x-ray spectral analysis for a 300-hour anneal show that a rich-boron phase is formed which is very close in composition to TiB_2. A silicon carbide fiber also reacts with the titanium matrix at 900°C and 300 hours with the formation of two annular zones very close in composition and close to the composition of titanium silicide Ti_3Si. At higher temperatures a phase rich with silicon -- Ti_5S_3 is formed. 3 figures, 4 bibliographic references.
1/1

USSR

UDC 669.018.95

BURYKINA, A. L., DZYADYKEVICH, Yu. V., and GORSKIY, V. V., Institute of Problems of Material Science, Academy of Sciences UkrSSR, Institute of Physics of Metals, Academy of Sciences UkrSSR

"Investigation of the Compatibility of Boron Fibers With Tungsten Substrate and Titanium Matrix"

Kiev, Poroshkovaya Metallurgiya, No 11 (119), Nov 72, pp 48-53

Abstract: The reaction of boron fibers with a tungsten core was investigated at 1100°C and with a titanium matrix at 900, 1000, 1100, and 1300°C and 1, 3, 5, and 10 hrs of aging in a vacuum of $1 \cdot 10^{-4}$ mm Hg. Metallographic methods, x-ray phase and x-ray microspectral analysis, and microhardness measurements were used for the investigation. It was established that the boron fiber reacts with the tungsten substrate at 1100°C to form the higher tungsten borides WB_4 and, probably, WB_{12}. Boron fiber is stable in a titanium matrix up to 900°C; at higher temperatures, titanium borides Ti_2B and TiB are formed as a result of unipolar diffusion of boron into titanium. A comparison of results with data of other authors indicates that in the composition boron fiber - titanium matrix at 900°C a diffusion zone develops over a period of 100 hrs which has the same thickness as in

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USSR

BURYKINA, A. L., et al., Poroshkovaya Metallurgiya, No 11 (119), Nov 72, pp 48-53

a nickel matrix at 700°C at the same heating duration. Four figures, one table, thirteen bibliographic references.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THEORY OF DISCLINATIONS IN LIQUID CRYSTALS -U-

AUTHOR--DZYALOSHINSKIY, I.YE.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1443-1452
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SUBJECT AREAS--PHYSICS

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UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002200720016-1"

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106253

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXACT THEORY OF DISCLINATIONS IN NEMATIC LIQUID CRYSTALS IS DEVELOPED WITHOUT ASSUMING EQUALITY OF THE CONSTANTS K SUB11 AND K SUB33 AS DONE IN THE THEORY OF OSEEN (PRIME1) AND FRANCE (PRIME2). IT IS SHOWN THAT THE QUALITATIVE PATTERN OF MOLECULAR ORIENTATION NEAR THE DISCLINATION IS PRESERVED IN ALL CASES WITH THE EXCEPTION OF DISCLINATIONS POSSESSING A FRANC INDEX N EQUALS 2. A SHORT REVIEW OF THE OSEEN AND FRANC THEORY IS PRESENTED IN THE INTRODUCTION. FACILITY: INST. TEORETICHESKOY FIZIKI IM. L. D. LANDAU, AN SSSR.

UNCLASSIFIED

USSR

UDC 534.232

DZYGALO, V. I., KONOVALOV, G. P., INOZEMTSEV, V. M., SHPALTAKOV, V. F., MALAKHOV, YU. V., Institute of Metallurgy and Enrichment, Academy of Sciences of the Kazakh SSR

"A Piezoelectric Radiator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276552, Filed 11 Nov 68, p 147

Abstract: This author's certificate introduces a piezoelectric radiator which contains a piezoelectric element and electrode plates. As a distinguishing feature of the patent, the reliability is improved by making each of the windings in the device in the form of a conductive layer of liquid which is isolated from the ambient medium by an acoustically transparent membrane tightly connected to the piezoelectric element around the periphery.

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USSR

UDC 669.71'721'782

GREBENKIN, V. S., SIL'CHENKO, T. V., GORSHKOV, A. A. and DZYKOVICH, I. YA.,
Institute of Casting Problems, Academy of Sciences Ukrainian SSR

"Effect of Magnesium on Tin and Lead Distribution in Aluminum-Silicon Alloys"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 50-54

Abstract: The impurities in secondary aluminum alloys include readily fusible and liquation-prone β-type elements such as Sn, Pb, As, Sb (up to 0.1-0.2% of each) which appear to impair the mechanical properties of the alloys at both room and higher temperatures. Alkaline, alkali-earth, transition (Ti, Zr, V), and rare-earth elements form chemical compounds with the β-type elements and under certain conditions neutralize their adverse effect in the alloys. This study involving Al-Si-Mg alloys with Sn and Pb additions to the Mg Si-type phase revealed appreciable amounts of Sn and Pb which had affected the phase composition and changed it to $Mg_2Si_{0.3}\beta_{0.7}$ (β = Sn or Pb). In Al-Si-Cu-Mg alloys Pb and Sn act to hinder the formation of the quaternary phase $W(Al_xMg_5Cu_4Si_4)$ while promoting the

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GREBENKIN, V. S., et al, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 50-54

formation of the Mg_2Si phase which also contains Cu, Sn and Pb. In Al-Si-Cu-Mg alloys, Sn hinders while Pb promotes the formation of the $CuAl_2$ phase. There were no inclusions of free Sn in the Al-Si-Mg and Al-Si-Cu-Mg alloys. Despite the low Mg contents in the chemical compounds, they appear to have combined the entire tin. The study shows that both Sn and Pb are electronic analogs of Si. They are capable of substituting for Si in Mg_2Si or $W(Al_xMg_5Cu_4Si_4)$-type magnesium compounds, making it possible to neutralize the adverse effect of Sn and Pb in aluminum alloys. (1 illustration, 3 tables, 14 bibliographic references).

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USSR UDC: 539.4.019.1

GRABIN, V. F., GUREVICH, S. M., DZYKOVICH, I. Ya., ZAYKOV, V. N., and SABOKAR', V. K.

"Characteristics of the Formation of Intermetallides in Titanium-Copper Joints Produced by Explosion Welding"

Moscow, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 65-69

Abstract: Use has been made of micro-x-ray spectral analysis to study the conditions for the formation of intermetallides in the copper-titanium contact zone in explosion welding. The role of niobium in eliminating the tendency to the formation of intermetallides in the process of welding the β-alloy(Ti--37%, Nb--3%, Al with M1 copper) is explained by the low diffusion mobility of niobium in the alloy which controls the formation rate of brittle phases. It is suggested that a higher content of niobium in the alloy will preclude the formation of intermetallides in the welded joint and raise the thermal stability of welded assemblies as well as widen the range of parameters of explosion welding.

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USSR

UDC: 621.791.011

GORDAN', G. N., DZYKOVICH, I. Ya., MAKARA, A. M., MOSENDZ, N. A., and SARZHEVSKIY, V. A.

"High-Temperature Chemical Inhomogeneity in the Weld-Affected Zone"

Moscow, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 114-119

Abstract: An analysis is presented of regularities in the development of high-temperature chemical microinhomogeneities on heating specimens of heat-resistant steels. The heating was carried out in welding thermal cycles to temperatures observed in the weld-affected zone of real welds. The steels involved were 30KhGSNA, 42Kh2GSNMA, 28Kh3SNMVFA, and others. The specimens measured 5 x 5 mm. The magnitude of the chemical inhomogeneity formed on high-temperature heating of rolled steels the inhomogeneity of the weld-affected zone of real welds appear to be comparable to that of a dendritic inhomogeneity which generally develops in the crystallization of welds and ingots of a similar composition. The formation of a chemical inhomogeneity along the grain boundaries on high-temperature heating of steels, and the redistribution and the changes in the shape of the nonmetallic

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GORDAN', G. N., et al, Fizika i Khimiya Obrabotki Materialov, no 6, Nov-Dec 70, pp 114-119

inclusions have an adverse effect on the properties of the weld-affected area adjoining the weld promoting the generation and propagation of micro cracks.

USSR UDC 621.791.856.3:669.15-194:546.621

RYABOV, V. R., YUMATOVA, V. I., GRABIN, V. F., BUTNIK, A. P., DZYKOVICH, I. Ya., KUZNETSOV, Ye. P., and BELOZEROV, L. F., Institute of Electric Welding imeni Ye. O. Paton

"Effect of Nickel and Chromium in Steel on the Characteristics of Alloy Combinations"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 18-23

Abstract: An investigation was made of the effect of additions of nickel and chromium to Armco iron on the characteristics of the diffusion layer which appears during calorization. The dependence of the durability of steel-aluminum alloys on the additions contained in the steel was also studied. The nickel and chromium alloys with steel were prepared in an induction furnace with a capacity of 7 kg, and the ingots obtained were annealed at 1100-1200°C for three hours. They were then rolled into plates measuring 220 x 1200 x 3 mm. After slag removal, the specimens were calorized in an aluminum bath and cleaned. Tests were made of welds of experimental alloys prepared in the ADSV-2 automatic welder, and the phases of the layers formed during calorization and welding were studied 1/2

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RYABOV, V. R., et al, Avtomaticheskaya Svarka, No 2, Feb 71, pp 18-23

by X-ray analaysis. The introduction of nickel and chromium was found to delay the growth of the calorized diffusion layer.

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Acc. Nr. AP0040014 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code UR 0096

70540m **Water system of branch stati[redacted] [of electric power plants].** Kostrikin, Yu. M.; [redacted]. A.; Toboleva, A. D. (Vses. Teplotekh. Inst., Moscow, USSR). *Teploenergetika* 1970, 17(1), 74-5 (Russ). The chem. and spectral anal. of the deposits formed in the flow regions of the turbines was carried out. The main components of the deposits are compds. of Si, Al, Fe, and to a lesser extent Na and Cu. The content of Fe, Si, and Al oxides is usually tens of percents while Cu occasionally reaches also >10%. The Cu and Zn enter the water system by the corrosion of the low pressure preheater tubes. The Na is probably derived from the aging of the anion-exchanger units. The Fe content is directly assocd. with the no. of on-off switching events. The SiO_2 and Al_2O_3 are transported by the soln. in the high-pressure steam. Preventive means are outlined to minimize the amt. of deposits. M. Shelef

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Microelectronics

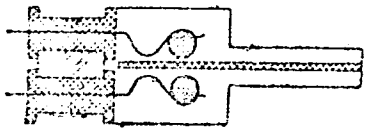
USSR UDC: 621.3.049.75

GALINOVSKIY, A. I., DZYUBAK, E. I.

"A Connector for Printed Circuit Boards"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 6, Feb 71, Author's Certificate No 294270, Division H, filed 15 Apr 68, published 26 Jan 71, p 181

Translation: This Author's Certificate introduces a connector for a printed circuit board. The unit contains an insulated base with two rows of flat contact springs arranged in parallel. As a distinguishing feature of the patent, the operational reliability of the connector is improved by fitting the insulated base with two camshafts which are parallel and interconnected by a common drive mechanism. The contact springs of the connector rest on the cams on these shafts.



USSR

UDC 632.95

PROTOPOPOVA, G. V., REYDALOVA, L. I., DZYUBAN, A. D., MOLYAVKO, L. I., DOROSHENKO, V. V., MIKHAYLYUCHENKO, N. K., SHOKOL, V. A., DERKACH, G. I.

"Insecticidal Activity of Esters of bis-(3-arylcarbamido) phosphoric and thiophosphoric Acids"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Materials. Republic Interdepartmental Collection), 1972, vyp. 4, pp 9-11 (from RZH-Khimiya, No 5 (II), 1973, Abstract No 5N579)

Translation: A study was made of the insecticidal activity of esters with the formula $ROP-(X)(NHCONHR')_2$ (I) (X = O or S; R = alkyl, aryl; R' = Ph, $C_6H_4SCN-\pi$, α-pyridyl) for rice weevils, housefly larvae and imago and greenbugs. The I containing the SCN-group have the highest insecticidal activity, and among them the activity rises on going from the methyl to the propyl and isopropyl radicals.

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USSR

UDC 632.95

PROTOPOPOVA, G. V., DZYUBAN, A. D., REYDALOVA, L. I., GOLIK, G. A., and SHOKOL, V. A.

"Insecticidal and Acariasicidal Properties of the Esters of Phosphazomethylphosphonic Acid"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiological Effects of Compounds, Republic Interscience Symposium), Vyp 4, 1972, pp 11-13 (from Referativnyy Zhurnal -- Khimiya, No 4(II), 1973, Abstract No 4N603 by T. A. Belyayeva)

Translation: The esters E of phosphazomethylphosphonic acid under laboratory conditions demonstrate insecticidal and acariasicidal properties of a contact and systemic nature. Of the compounds studied, $MeP(O)(OEt)N=P(OisoPr)_3$ compound I) showed the strongest contact effect -- SK_{50} = 1.78 in 3 days for rice weevils and 0.39 for grain aphids. Contact insecticidal activity was increased by using iso-Pr in the trialkoxyphosphazo group. Comp. I in a 0.05% concentration results in 96% mortality of the mite Tetranychus urtical on the second day.

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